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AUTHOR Vande Kopple, William J.
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ABSTRACT

Functional Sentence Perspective (FSP) is a theory that predicts how units of information should be distributed in a sentence and how sentences should be related in a discourse. A binary topic-comment structure is assigned to each FSP sentence. For most English sentences, the topic is associated with the subject or the left-most noun phrase, and the comment is associated with the predicate phrase or carries particular stress. Eight experiments were conducted to determine whether an English discourse that is consistent with FSP has cognitive advantages over one with the same content but contradictory to FSP. The results indicated that subjects added new information to an anchor of old information in memory. If composition teachers taught both the principles of FSP and the ways in which their students could reconcile these principles with English syntax, it would enable the teacher to discuss cohesion of paragraphs and larger stretches of discourse with terms that are much more explicit than many of those used now and also improve upon the students' writing. Preliminary studies also indicate that FSP may increase enable the reading comprehension. (HOD)

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Functional Sentence Perspective and Composition
A Paper Presented at the 1980 NCTE Convention

William J. Vande Kopple
Calvin College

In this paper I hope to do four things: (1) explain the theory of Functional Sentence Perspective (FSP) briefly, (2) describe eight experiments which tested whether the theory is cognitively justified, (3) present some implications of this research for composition and reading teachers, and (4) pose some questions that should stimulate future research.

FSP is a theory that predicts how units of information should be distributed in a sentence and how sentences should be related in a discourse. The theory originated in Henri Weil's research in Europe in the nineteenth century. In this century, Weil's work inspired Vilém Mathesius, who with several other European linguists further developed the principles of FSP by analyzing the interworkings of syntax with semantics in German, Russian, and Czech. Since American linguists have become aware of FSP, they have used the theory to help answer questions on forward and backward pronominalization and gapping.[1]

In brief, Functional Sentence Perspectivists assign a sentence, besides its usual syntactic and semantic structures, a binary topic-comment structure.[2] And although we haven't been able to determine which morpho-phonological and syntactic structures are systematically related to the topics and comments of all sentences, for most English sentences the topic is associated with the subject or the leftmost

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[1]See Susumu Kuno, "Generative Discourse Analysis in America," Current Trends in Textlinguistics, ed. Wolfgang U. Dressler (New York: de Gruyter, 1978), pp. 275-294.

[2]See Teun A. van Dijk, Text and Context: Explorations in the Semantics and Pragmatics of Discourse (London: Longman, 1977), p. 114.

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noun phrase, and the comment is associated with the predicate phrase or carries particular stress.

For the topic and comment theorists posit several slightly different but often corresponding semantic and communicative functions. However, most assign the topic the role of expressing the old information in a sentence, that which is either stated in, derivable from, or relatively more accessible in the prior context. And most assign the comment the role of expressing the new information in a sentence, that which is not present in, is difficult to derive from, or is relatively less accessible in the prior context. This does not mean that the other posited communicative functions are insignificant. It does mean that many scholars believe that the distinction between old and new information is the principal one underlying the topic-comment articulation and that a more objective decision can probably be made about what is old and new information than about what information the other posited functions would subsume.

The theory of FSP, then, predicts how we should distribute information in a sentence. But in order to distribute the information in a sentence properly, we must know what information precedes a sentence in discourse. And if we follow the theory, we will write connected discourses with particular kinds of structures.

My primary question in research was whether an English discourse that is consistent with FSP has cognitive advantages over one with the same content but that is contradictory to FSP. Weil has claimed that the movement from topic to comment "reveals the movement of

the mind itself."[3] If this is true, a discourse consistent with FSP should certainly be more readable and memorable than one contradictory to FSP. Thus I decided to perform several experiments on two paragraph forms that I constructed by following FSP, and their variants, which I constructed by contradicting the theory. In general, the sentences of the forms consistent with the theory expressed old information in their topics and new information in their comments. In the sentences of the variants, I reversed the positions of old and new information.

Although some scholars might disagree, I contend that such discourses have identical truth values. Thus truth value will not be a relevant variable. For some evidence I point to Jacqueline S. Sachs's finding that "two sentences can have different forms but express the same meaning."[4] And even if there were slight differences in truth value, few people reading normally would be likely to notice them.

I call one of the paragraph forms consistent with FSP topically linked. Topics in it are identical or closely related through pronoun substitution, synonym substitution, specification, additional characterization, slight qualification, or enumeration of set members. For an example of a topically linked form, consider paragraph 1 (with main topics underlined):

> Currently the Marathon is the best waxless ski for recreational cross-country skiing. Its weight is a mere two pounds. Yet its two-inch width allows the skier to break a trail through even the heaviest snow. Its most unique characteristic is the fishscale design for its bottom. The

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[3]Cited in Jan Firbas, "Some Aspects of the Czechoslovak Approach to Problems of Functional Sentence Perspective," in Papers on Functional Sentence Perspective, ed. František Daneš (The Hague: Mouton, 1974), p. 12.

[4]"Recognition Memory for Syntactic and Semantic Aspects of Connected Discourse," Perception and Psychophysics, 2 (September, 1967), 438.

> Marathon is almost as effective as most waxable skis. In fact, it is even better than some waxable skis when the snow is very wet. The Marathon can be used with most conventional bindings. However, it works best with the Suomi double-lock. Finally, the Marathon is available in six different colors.

The topics in paragraph 1 are either identical or closely related.

In the variant of paragraph 1, most of the topics are only remotely related. Consider paragraph 2, which is also shown with its main topics underlined:

> Currently the best waxless ski for recreational cross-country skiing is the Marathon. A mere two pounds is its weight. Yet the skier can break a trail through even the heaviest snow with its two-inch width. The fishscale design for its bottom is its most unique characteristic. Most waxable skis are only slightly more effective than the Marathon. In fact, when the snow is very wet, some waxable skis are not as good as it. Most conventional bindings can be used with the Marathon. However, the Suomi double-lock works best with it. Finally, six different colors are available for the Marathon.

The topics here are only remotely related. However, paragraph 2 contains the same number of topics and the same propositional information as paragraph 1. And in almost all other important respects the two paragraphs are either identical or very similar.

I call the second paragraph form that is consistent with FSP rhetorically linked. The information in the comment of the first sentence carries over to the topic of the second. The information in the comment of the second carries over to the topic of the third. This pattern continues, producing a chain of old and new information. For an example of a rhetorically linked paragraph, consider paragraph 3 (with its main topics underlined):

> "The Odyssey" is an excellent example of an epic poem. Epic poems usually include a long narrative or story. This story is almost always marked by certain conventions. One of these is the epic simile. It is normally used to enhance the stature of a great hero. Such a hero personifies the ideals of particular societies. Among these ideals, naturally, is

> the trait of bravery. But bravery is always accompanied by courtesy. And this courtesy includes many particular ways of acting.

In the variation of paragraph 3, the chain of information is disrupted since sentences have new information in their topics. Consider paragraph 4, also shown with its main topics underlined:

> An excellent example of an epic poem is "The Odyssey." A long narrative or story is usually included in epic poems. Certain conventions almost always mark this story. The epic simile is one of these. The stature of a great hero is enhanced through its use. The ideals of particular societies are personified in such a hero. The trait of bravery, naturally, is among these ideals. But courtesy always accompanies bravery. And many particular ways of acting are included in this courtesy.

In this paragraph the chain of information is broken up. Yet paragraph 4 contains the same number of topics and the same propositional information as paragraph 3, and in most other ways the two paragraphs are identical or very similar.

On various particular topically linked paragraphs and their variants, and on various particular rhetorically linked paragraphs and their variants I performed five readability and three retention experiments. Before the experiments, however, I tried to ensure that no words or sentences in one of the paragraphs were markedly awkward. Several colleagues read linked paragraphs, and several others read the variants, noting any words or sentences that they considered awkward. If one evaluator objected to a word or sentence, I changed it, usually in line with his or her suggestions. Therefore, one of a pair of paragraphs should not have had an advantage in experiments because it contained fewer inappropriate words or awkward sentences than the other.

I conducted the following five readability and three retention

tests, in which I distributed subjects at random and counterbalanced subjects when necessary: the first readability experiment involved subjective judgments of readability with subjects alerted to judge before they read a pair of paragraphs once. The second experiment involved subjective judgments of readability with subjects alerted to judge after they read a pair of paragraphs once. The third also involved subjective judgments of readability, but this time subjects were alerted to judge before they read a pair of paragraphs several times. The fourth involved timed oral readings of groups of paragraphs, in which speed and accuracy were important. And the fifth readability experiment involved five-minute typing tests on groups of paragraphs, in which speed and accuracy were again important.

The first retention experiment was a double-distractor recognition test, in which the targets expressed new information. The second was a short-answer test, in which the correct answers expressed new information. And the third retention experiment was an immediate recall test; the protocols were scored for function words, content words, and three-word sequences.

In almost every experiment particular topically linked and rhetorically linked paragraphs tested out as statistically highly superior to their variants. The only exceptions to this generalization as far as the topically linked paragraphs and their variants go were statistically insignificant advantages for variants in accuracy on the typing test and in function words on the recall test. The only exceptions as far as the rhetorically linked paragraphs and their variants go were statistically insignificant advantages for variants in speed on the typing test and in correct answers on the short-answer

test. Thus we have compelling evidence for FSP as a function of connected natural discourse in English.

We can best explain why the linked forms were superior to their variants by extending Haviland and Clark's proposed given-new strategy of comprehension[5] from pairs of sentences to connected natural discourse. According to this theory, when we read a sentence, we first divide it into its given and new information. We view the given as a pointer to a matching antecedent in memory and search for it. Once we find it, we add the new information to it. If we cannot find an antecedent, we either construct one with an inferential bridge, or we view all the information as new and begin a new and separate memory structure, or we try to reanalyze what is given and new in the sentence. Thus a sentence will be easy to process if its given information is clearly marked and obviously matches an antecedent in memory. A sentence will be difficult if the given information is not clearly marked, does not match an antecedent in memory, or demands an inference for identification.

In both of the linked paragraphs, old information is clearly marked by repetition, is conveniently placed in sentence topics, and matches information already in storage.

Thus we have some reason to believe that one of the efficient ways our minds move is from old to new information. The best evidence that subjects actually added new information to an anchor of old information in memory is provided by the recall protocols of those subjects who read and recalled variants. Many of them actually

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[5]See "What's New? Acquiring New Information as a Process in Comprehension," Journal of Verbal Learning and Verbal Behavior, 13 (October 1974), 512-521.

rearranged information in the sentences of a variant, writing protocols that resembled linked forms. That is, they took bits of old information expressed in the comments in variants and topicalized them.

To determine the extent of this tendency in the recall test on the variant of a topically linked paragraph, I first counted how many grammatical sentences after the opener were in the protocol. Then I counted the number of these which expressed old information not in their comments but in their topics. Sixty of the 101 grammatical sentences did. Twenty-five of thirty-six subjects switched the old and new information around in at least one sentence.

In the same way, I examined the protocols of those subjects who recalled the variant of a rhetorically linked form. In 24 of 126 grammatical sentences the old information was switched from the comment to the topic. Fourteen of thirty-six subjects switched the old and new information around in at least one sentence.

I believe that this research has important implications for composition teachers. They should teach both the principles of FSP and the ways in which their students can reconcile these principles with English syntax. Doing this would be beneficial in several ways. First, we would have an important and experimentally justified principle for composing. Too many of the principles we inculcate lack any empirical proof. Second, we would be able to discuss cohesion of paragraphs and larger stretches of discourse with terms that are much more explicit than many of those we often use now. Third, students would probably develop a more thoughtful approach to their composing processes. Many seem merely to record information as they think of it; instead of that, they could learn to identify old and

new chunks of information and position them according to FSP. And once students begin to observe the principles of FSP, their discourses should become more readable, memorable, and cohesive.

In addition, my research provided some reason to believe that training students in the principles of FSP might make them better readers. I must do more work in this area, but some preliminary study of the correlations between subjects' performances in my experiments and their reading comprehension scores has led me to suspect that those who most often prefer forms which facilitate the given-new strategy of comprehension also have the highest reading comprehension scores. Perhaps the ability to relate new to old information is one of the key skills underlying reading comprehension. And perhaps training students in the principles of FSP will help them improve their reading comprehension.

It should be relatively easy to teach the most general principles of FSP. In the first three readability tests subjects had to justify their subjective decisions on readability in writing. Their comments showed that they could intuitively recognize the structural advantages of linked paragraphs.

In the tests on topically linked forms and their variants, for example, some subjects noted that they favored the topically linked forms because in them "the main idea comes first, followed by an explanation of the idea," because each of their sentences "lets you know right away what it is about," because each sentence "tells what you will be discussing first," and because "at the beginning of each sentence there was a general topic."

In the subjective readability tests on rhetorically linked forms

and their variants, subjects were equally perceptive. Some subjects noted about rhetorically linked forms that "one piece of information led to another," that "each sentence led to the next," and that "the end of a sentence leads right into the beginning of the next."

I conclude by noting that several important questions that are related to FSP remain to be answered. For example, how are the morpho-phonological and syntactic structures of English sentences systematically related to topic and comment?[6] How can we determine what the topic and comment of initial sentences in discourse are? How can we determine the topic-comment structures of complex sentences? How can we relate the topics and comments to the topic of discourse?[7] When do we develop the ability to relate new information to old, or when does this ability show itself? And do people of similar cultural and educational backgrounds develop similar cognitive hierarchies or sets of old and new information? Answers to these questions will probably help composition teachers, reading teachers, and cognitive psychologists.

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[6]See van Dijk, p. 115.

[7]Ibid., p. 115.